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(54) PHOTOGRAPHIC PROCESSING METHOD AND PHOTOGRAPHIC  
PROCESSING DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a technique which enables an operator to check beforehand in any way front print data, such as the date of photography, is superposed in what position of photographic images and is outputted on a monitor.

SOLUTION: This photographic processing device has an image processing means 45 which processes the photographic images read from input media recorded with the photographic images and displays the same on the monitor 44 and an output means which outputs the output data obtained by synthesizing the front print data to the prescribed position of the photographic images to output media. The image processing

means 45 forms the images corresponding to the output data obtained by synthesizing the photographic images and the front print data and displays the images on the monitor 44.

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## CLAIMS

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[Claim(s)]

[Claim 1] The photographic-processing approach characterized by to generate the image image corresponding to the output data which come to compound said photograph and said front print data in the photographic-processing approach which outputs the output data which compounded with the front print data inputted separately, and were obtained to an output media, and to display this image image on said monitor while process the photograph read in the input medium with which the photograph was recorded with an image processing system and making a monitor display it.

[Claim 2] An image-processing means to process the photograph read in the input medium with which the photograph was recorded, and to display on a monitor, In photographic-processing equipment equipped with an output means to output the output data which compounded the front print data inputted separately to the position of said photograph, and were obtained to an output

media Said image-processing means is photographic-processing equipment characterized by being an image-processing means to generate the image image corresponding to the output data which come to compound said photograph and said front print data, and to display this image image on said monitor.

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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the photographic-processing technique equipped with the function which compounds front print data, such as the date, to the photograph recorded on input media, such as a photographic film, and is outputted to it at output medias, such as printing paper.

[0002]

[Description of the Prior Art] When the photograph recorded on input media, such as a photographic film, can be conventionally burned on the printing paper as an output media and the front print data of time of day or a date with which the photograph was photoed are recorded on said input medium, photographic-processing service which reads said front print data and can be burned [ photograph ] with a photograph is offered. For example, since the information on photography time is recordable on an APS film, on the occasion of the baking, it is performed that the front print data of photography time can be burned with a photograph. The baking device for front prints by the front print

data of the photography time which can be burned at this time carrying out sequential luminescence of the predetermined LED, arranging LED of for example, seven segments and two or more LED in a serial, and moving printing paper is used. With such a configuration, although the photograph could check [ in / in the middle of an image processing until it can be burned on printing paper etc. / the process ] the photograph read in the medium in photographic-processing service on a monitor's screen, it was not able to check in advance how a photograph and front print data would actually be compounded and printed by the monitor. Moreover, it was not able to check in advance whether also in the case of equipped with the function to set up beforehand the location which can be burned in front print data photographic-processing equipment, it would be compounded by which part of a photograph and could actually be burned by the monitor.

[0003]

[Problem(s) to be Solved by the Invention] Thus, since it was not able to check the middle how a photograph and front print data would actually be constituted and could be burned in the process, when actually printed, there was a problem that the front print of the photography time of day is carried out instead of the

photoed date, or it was printed on the important part of a photograph after the front print has lapped. In such a case, when redone, there was a problem that a print loss occurred. In order not to generate such a print loss, the time and effort of checking the contents of the front print data set up is required. With reference to specification, an operation manual, etc., it needed to reconfirm that the location of a front print became where when a photograph is rotated, and it can be burned especially and made to rotate etc.

[0004] This invention is made for the purpose of offering the technique in which it can check in advance to which location of a photograph front print data, such as photography time, are piled up and outputted how by the monitor, in order to solve the above technical problems.

[0005]

[Means for Solving the Problem] While the photograph read in the input medium with which the photograph was recorded is processed with an image processing system and the photographic-processing approach of claim 1 of this invention makes a monitor display it In the photographic-processing approach which outputs the output data which compounded with the front print data inputted separately, and were obtained to an output media The image image

corresponding to the output data which come to compound said photograph and said front print data is generated, and it is characterized by displaying this image image on said monitor.

[0006] And an image-processing means for the photographic-processing equipment of claim 2 to process the photograph read in the input medium with which the photograph was recorded, and to display on a monitor, In photographic-processing equipment equipped with an output means to output the output data which compounded the front print data inputted separately to the position of said photograph, and were obtained to an output media Said image-processing means generates the image image corresponding to the output data which come to compound said photograph and said front print data, and is characterized by being an image-processing means to display this image image on said monitor.

[0007]

[Embodiment of the Invention] Drawing 1 is the block diagram of an example of the photographic-processing equipment concerning this invention. It can be burned and this photographic-processing equipment A consists of the development section 3 which develops and discharges the section 2 and the



printing paper which was able to be burned in the image which can be burned on printing paper in the print data set up based on the read image data with the scanner section 1 which reads image data in each coma of the photographic film [ finishing / development ] separately developed with the film developer (not shown), and the image-processing section 4.

[0008] The scanner section 1 is an input means to input image data from the photographic film as an input medium, by setting a photographic film [ finishing / development ] to the scanner unit 11, it irradiates the light from the light source unit 12 at the photographic film held at the film mask of the scanner unit 11, reads the image of each coma one by one, and outputs it to the image-processing section 4. According to the format of the film to process, for example, 135 films, 240 films (the so-called APS film), etc., said film mask is exchanged for the film mask of suitable structure, and is processed. Moreover, in processing an APS film, the magnetic data reading machine 13 arranged by the film mask for APS films reads the front print data as addition data by which magnetic recording was carried out corresponding to each coma of a photographic film, and outputs them to the image-processing section 4. When front print data are not recorded, or when reading is impossible, the data made

to have no front print data are outputted. In addition, taking the case of the case where an APS film is mainly processed, it explains below. The case of photographic films other than an APS film, and even when it is judged that he has no front print data, a keyboard etc. can be operated, desired front print data can be created, and a front print can also be presented.

[0009] The image-processing section 4 received the image data and front print data from the scanner section 1, performed the image processing, is an image-processing means to create the print data D3 which consist of image data D1 and front print data D2, and is equipped with the image-processing unit 45 which consists of computers by which image-processing software was installed, the memory 46 which memorizes image data temporarily, the full keyboard 42, the mouse 43, and the monitor 44. Said monitor 44 is a display means to display the image data processed in said image-processing section 4, and has the function which indicates the image data of two or more coma by list like drawing 4 , or indicates the image data of each coma by sequential according to an individual like drawing 5 and drawing 6 . Said memory 46 is equipped with the R/W equipment of various exchangeable record media, such as a flexible magnetic disk, CD-ROM, and MO, ZIP, in addition to semiconductor memory. [ a

hard disk drive unit, and ] It can be used as an output media which replaces these record media with the input medium which replaces a photographic film, or printing paper. In this case, the R/W equipment of these storages serves as a configuration equivalent to an input means and an output means.

[0010] Said baking section 2 is the output means which can be burned on the printing paper P as an output media in the print data D3 created in the image-processing section 4, for example, cuts into predetermined die length the printing paper P supplied from either of two paper magazines 21a and 21b by the cutter 22, and conveys the cut printing paper P in the exposure device 23. In the exposure device 23, Rhine exposure of the inputted print data D3 is carried out at the printing paper P conveyed one line at a time according to the conveyance device 25 using the exposure unit 24. Thus, the printing paper P which was able to be burned in print data is sent to the development section 3, and a development is carried out. In the development section 3, in the development unit 31, negatives are processed sequentially and developed with a predetermined drug solution, it is made to dry in the desiccation unit 32, and printing paper [ finishing / exposure ] P is finished behind, and is discharged as a print.

[0011] In the block diagram of drawing 2 , after the image data read in the scanner unit 11 of the scanner section 1 is once saved in the memory 46 of the image-processing section 4 and an image processing is suitably carried out in the image-processing unit 45, it can be burned as print data and outputted to the section 2. In said image-processing unit 45, an image processing is carried out according to the information inputted from a predetermined processing program and a predetermined full keyboard 42. And the image data by which the image processing was carried out is displayed on a monitor 44 at any time. In said baking section 2, the print data outputted from the image-processing section 4 are inputted into the exposure processing unit 26, are changed into exposure data, and are outputted to the exposure device 23 according to actuation of the exposure section keyboard 27 mentioned later, for example, actuation of pushing a "start key." In the exposure device 23, the exposure data for the Rhine exposure are generated based on said print data, and it is outputted to the exposure unit 24.

[0012] And in the exposure unit 24, Rhine exposure is carried out using the laser exposure device which consists of the laser light source which is not illustrated on the printing paper P in which sequential conveyance is carried out at a time

by the conveyance device 25 of one line of drawing 1 , a polygon mirror, etc. In addition, said exposure processing unit 26 synchronizes the conveyance timing of said conveyance device 25, and the timing of the Rhine exposure of the exposure unit 24, and is controlled. Thus, print data can be burned on printing paper P. In addition, it has the small exposure section monitor 28 by which the information according to the process of exposure processing is displayed, and the small exposure section keyboard 27 for giving directions required for the process of exposure processing.

[0013] Based on the block diagram of drawing 1 , the block diagram of drawing 2 , and the flow chart of drawing 3 , the scanner section 1, the image-processing section 4, and processing [ in / it can be burned and / the section 2 ] are explained in more detail. First, in step S1, an operator sets the negative mask for APS to the scanner unit 11 in step S2, when judging whether it is processing an APS film from now on and processing an APS film. And the conditions of the color, graphic size, exposure location, etc. of a front print choose the print channel for APS film processing set up beforehand, and set to the negative mask for said APS the APS film which it is going to process from now on.

[0014] In step S3, the APS film set to the scanner unit 11 is scanned

automatically, and the image data D1 and the magnetic data of each coma are read. In addition, image data D1 is read by the optical sensor formed in the scanner unit 11, and reads magnetic data with the magnetic data reading vessel 13 formed in the scanner unit 11. These read data are inputted into the image-processing section 4. In step S4, it confirms whether magnetic data were able to be read in step S3, when magnetic data are not able to be recorded or it is not able to read, it progresses to step S8, and only image data is displayed.

[0015] In step S5, it confirms whether the front print data D2 are in the read magnetic data, when there is nothing, it progresses to step S8, and only image data D1 is displayed. When it is, it progresses to step S6. The front print data D2 read in step S6 will be compounded with the image data D1 of the coma concerned, it confirms whether be a setup which displays the compounded image, and if it is a simple setup, it will progress to step S8 and only image data will be displayed. If it is a setup to compound, it will progress to step S7. In step S7, the image image of the front print data D2 is compounded with the image data D1 of a coma, and the image for displaying on a monitor 44 is generated.

[0016] In step S8, only the image data D1 of a coma displays the image data by which the image image of the front print data D2 was compounded. In addition,

in the image-processing section 4, it is good to once memorize the image image of image data D1 and the front print data D2 in memory, and to display the coarse image data for value monitors generated from said image data D1 on a monitor 44. In this monitor 44, as shown in drawing 4 , every six coma image data is displayed. And the image data displayed in here is image data in the condition that processing which includes automatic image amendment beforehand was performed, and can also display only the image data of a specific coma on a screen like drawing 5 .

[0017] In step S9, if it confirms whether the operator performed the key stroke (for example, actuation of pressing 42Ffull keyboard 1 key) for rotating the image data displayed on the monitor 44 and a key stroke is performed in the case of an image sideways [ like drawing 5 ], it will progress to step S10. In step S10, only image data D1 makes it rotate, and it displays, and the image image of a front print D2 is displayed, after only image data D1 made it rotate 90 degrees and has stood erect like drawing 6 , without making it rotate. Thus, even if it rotates image data D1, the image image of the front print data D2 is displayed oblong, without making it rotate.

[0018] In step S11, if an operator checks the displayed image data and there is

the need for image amendment, an exclusive keyboard (not shown) will be operated and the contents of amendment will be changed, and if the display position, the magnitude, the color, etc. of the image image of the front print data D2 are inconvenient, mouse 43 grade will be operated and it will change into desired location, magnitude, color, etc. Moreover, it is also possible to operate a full keyboard 42 and to edit the contents of the front print data D2. In addition, as contents of front print data, discernment data, such as the contents, the contents of order, etc. of image-processing data, such as the contents of image amendment, and the original image data, message alphabetic data, etc. can be included in everything but photography time data. And if image data and front print data are it less necessary to be amended, a "start key" will be pushed, for example, the contents of image amendment, the location of the front print data D2, etc. will be determined, and the exposure processing in the baking section 2 after step S12 will be made to start. In said image-processing section 4, the image data D1 amended based on said determined contents of amendment and said determined image image of the front print data D2 are compounded, and it is outputted to said baking section 2 as print data D3. In addition, said exclusive keyboard is embedded in the crevice established in the top face of a console 14,



and is arranged so that it may not become a failure at the time of installation of a full keyboard 42.

[0019] In step S12, a part for the die length specified from the specified paper magazine (21a, 21b) is pulled out, a cutter 22 cuts in step S13, and the printing paper cut in step S14 is set to an exposure starting position. In step S15, it can be burned, and in the section 2, the exposure unit 24 and the conveyance device 25 are controlled, the print data D3 are exposed per dot, and printing paper is sent to the development section 3. In step S16, in the development unit 31 of the development section 3, carry out a development, and it is made to dry in the desiccation unit 32, and is finished in step S17, and the exposed printing paper is discharged as a print with a predetermined drug solution. Thus, since [ which it was finished, and the print was made to rotate a camera 90 degrees, and was photoed ] it was obtained, also when it becomes width and is reflected like drawing 5 on the film, since the contents, such as the alphabetic character of the front print data D2, and the sense of the image based on image data D1 are the same direction like drawing 6 , a legible print is obtained. In addition, in drawing 4 , and 5 and 6, D1 is an image image corresponding to image data D1, D2 is an image image corresponding to the front print data D2, and D3 is an image image

corresponding to the print data D3.

[0020] Thus, since the location of a front print, magnitude or a color, etc. was changed looking at a monitor 44, it is the color which does not become obstructive in the location which does not become the obstacle of an image, and it became possible to display a front print in the magnitude which does not become obstructive. Moreover, although the pattern of the void of magnitude according to the contents of the front print is sufficient as an image image displayed on a monitor 44 corresponding to the front print data D2 in order to make an image processing easy, you may make it display the contents, such as the alphabetic character of the front print actually outputted.

[0021] In addition, as a method of digital exposure used for the exposure unit 24, the thing of a PLZT shutter method, a fluorescence beam method, and a liquid crystal shutter method other than the laser exposure method mentioned above may be used. Moreover, not only a photographic film but a network, a magnetic storage medium, an optical storage medium, or an optical magnetic storage medium is sufficient as an input medium. Not only printing paper but a network, a magnetic storage medium, an optical storage medium, or an optical magnetic storage medium is sufficient also as an output media.

[0022]

[Effect of the Invention] Since a monitor is made to display the front print data outputted to an output media with image data and it enabled it to check the location and magnitude according to the photographic-processing approach of claim 1 of this invention, a result image can be checked even if it does not actually output to output medias, such as printing paper. Therefore, the activity of the check of a setup, a check of a manual, etc. about a front print becomes unnecessary, and the quick activity of it is attained. Furthermore, since it can check whether the front print has lapped with the important part of an image, without actually outputting to an output media, the loss of an output media etc. can be prevented. According to invention of claim 2, the photographic-processing equipment with which the above-mentioned effectiveness is acquired can be offered.

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] It is the block diagram of the photographic-processing equipment of this invention.

[Drawing 2] It is the block diagram of the important section of said photographic-processing equipment.

[Drawing 3] It is the flow chart which showed the procedure in said photographic-processing equipment.

[Drawing 4] It is drawing having shown a monitor's example of a display in said

photographic-processing equipment.

[Drawing 5] It is drawing having shown a monitor's example of a display in said photographic-processing equipment.

[Drawing 6] It is drawing having shown a monitor's example of a display in said photographic-processing equipment.

[Description of Notations]

1 Scanner Section

11 Scanner Unit

13 Magnetic Data Reading Machine

2 Baking Section

21a, 21b Paper magazine

22 Cutter

23 Exposure Device, Output Means

24 Exposure Unit

25 Conveyance Device

26 Exposure Processing Unit

3 Development Section

4 Image-Processing Section

42 Full Keyboard

44 Monitor

45 Image-Processing Unit

46 Memory

D1 Image data

D2 Front print data

D3 Print data